

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-6. (Canceled)

7. (Currently Amended) An optical circuit comprising:
a first optical circuit layer disposed on a first substrate portion;
a second optical circuit layer disposed on a second substrate portion; [[and]]
an optical fiber of the first and second optical circuit layers extending
continuously between the first and second optical circuit layers; and
a third optical circuit disposed on a third substrate portion, wherein an optical
fiber of the third optical circuit layer extends continuously between the third optical
circuit layer and at least one of the first and second optical circuit layers.

8. (Original) The optical circuit of claim 7, wherein the first and second substrate portions are disposed in a stacked orientation.

9. (Cancelled)

10. (Original) The optical circuit of claim 7, wherein the first and second substrate portions are physically separate from each other.

11. (Original) The optical circuit of claim 7, wherein the first and second substrate portions are connected to each other by a substrate connection portion extending between the first and second substrate portions.

12. (Original) The optical circuit of claim 7, wherein the first and second substrate portions are separated from each other by an open window portion, and wherein the optical fiber extends over the window portion.

13. (Currently Amended) A method of forming a multi-layer optical circuit comprising:
patterning optical fibers to create a first layer of the optical circuit on a first substrate;
patterning optical fibers to create a second layer of the optical circuit on a second substrate, wherein the first and second substrates are separated from each other, and wherein at least one optical fiber is integral with and extends between the first layer and the second layer; ~~and~~
~~positioning the first and second substrates in a layered arrangement;~~
patterning optical fibers to create a third layer of the optical circuit on a third substrate, and wherein at least one optical fiber extends from at least one of the first layer of the optical circuit on the first substrate and the second layer of the optical circuit on the second substrate; and
positioning the first, second and third substrates in a layered arrangement.
14. (Currently Amended) The method of claim 13, wherein positioning the ~~first and second~~ first, second and third substrates in a layered manner comprises laying the second substrate on the first substrate.
15. (Currently Amended) The method of claim 13, wherein positioning the ~~first and second~~ first, second and third substrates in a layered manner comprises rotating the second substrate relative to the first substrate.
16. (Currently Amended) The method of claim 13, wherein positioning the ~~first and second~~ first, second and third substrates in a layered manner comprises twisting the second substrate relative to the first substrate.
17. (Currently Amended) ~~The method of claim 13, further comprising:~~ A method of forming a multi-layer optical circuit comprising:
patterning optical fibers to create a first layer of the optical circuit on a first substrate;

patterning optical fibers to create a second layer of the optical circuit on a second substrate, wherein the first and second substrates are separated from each other, and wherein at least one optical fiber is integral with and extends between the first layer and the second layer;

positioning the first and second substrates in a coplanar orientation prior to patterning optical fibers to create a first layer of the optical circuit on the first substrate and patterning optical fibers to create a second layer of the optical circuit on the second substrate, wherein positioning the first and second substrates in a layered arrangement comprises positioning the first and second substrates in a bi-planar orientation subsequent to patterning optical fibers to create a first layer of the optical circuit on the first substrate and patterning optical fibers to create a second layer of the optical circuit on the second substrate.

18. (Original) The method of claim 13, wherein positioning the first and second substrates in a layered arrangement occurs subsequent to patterning optical fibers to create a first layer of the optical circuit on a first substrate and patterning optical fibers to create a second layer of the optical circuit on a second substrate.

19. (Canceled)

20. (Canceled)

21. (Original) The method of claim 13, wherein the patterning further comprises securing the optical fibers to the first and second substrates adjacent ends of the optical fibers.

22. (Original) The method of claim 13, wherein the first substrate and the second substrate are connected to each other.

23. (Original) The method of claim 22, wherein the first and second substrates are connected to each other by a substrate strip extending between the first and second substrates.

24. (Canceled)

25. (Canceled)

26. (Canceled).

27. (Currently Amended) A method of forming a multi-layer optical circuit comprising:
patterning first and second optical circuits on first and second substrates, wherein said first and second circuits include a common optical fiber; [[and]]
positioning said first and second substrates in a stacked arrangement, wherein said positioning comprises a substrate manipulation selected from the group consisting of bending, folding, twisting and rotating at least one of the first and second substrates relative to the other; and
patterning a third optical circuit on a third substrate, wherein said third circuit includes a common optical fiber with one of said first and second optical circuits.

28. (Original) The method of claim 27, wherein the patterning further comprises patterning said first and second optical circuits in a common plane.

29. (Canceled)

30. (Currently Amended) The method of claim [[29]] 27, wherein the positioning further comprises a substrate manipulation selected from the group consisting of bending, folding, twisting and rotating the third substrate relative to at least one of the first and second substrates.

31. (Original) The method of claim 27, further comprising embedding at least one of said first and second circuits onto its respective substrate.

32. (Original) The method of claim 27, wherein said first and second circuits include a plurality of common optical fibers, and further comprising orienting the common optical fibers in a plane parallel to at least one of the substrates.

33. (Original) The method of claim 27, wherein said first and second circuits include a plurality of common optical fibers, and further comprising orienting the common optical fibers in a plane perpendicular to at least one of the substrates.

34. (Original) The method of claim 27, further comprising providing a crease region between the substrates.

35. (Original) The method of claim 34, further comprising orienting the common optical fiber in said crease region.

36. (Original) The method of claim 27, further comprising providing a window region between the substrates.

37. (Original) The method of claim 36, further comprising orienting the common optical fiber in said window region.

38. (Canceled).

39. (Canceled).

40. (Canceled).